Local Work Instruction:
Noble Discoverer: Non-Contact Cooling Water from Main Engine – (D009)

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Scope:		**Revised By:**	D. Johnson
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SCOPE

This document offers work level instructions for the sampling, testing, and reporting associated with the discharge of non-contact cooling water for the Main Engine, while operating under the guidelines of the NPDES GP (AKG-28-8100), on-board the *Noble Discoverer*. The Main Engine may be operated during mooring and/or unmooring operations to help keep the vessel correctly positioned. There is no plan for the Main Engine to be operated after the *Noble Discoverer* is moored and considered a stationary source. Use of the Main Engine will only occur to ensure safety of the vessel and the persons on-board. No chemicals or chemical additives are added to this discharge stream.

RESPONSIBILITY

The M-I SWACO NPDES Compliance Specialist is responsible for ensuring all personnel associated with this discharge are familiar with the procedures, requirements and responsibilities outlined in this LWI. Prior to drilling, the M-I SWACO NPDES Compliance Specialist will perform a pre-operational inspection and areas related to this outfall. M-I SWACO NPDES Compliance Specialist will sample and test all effluent cooling water used, while the Main Engine is operational and subject to the stipulations of the General Permit.

It is the responsibility of the M-I SWACO NPDES Compliance Specialist to will perform following tasks on a daily basis for each of the non-contact cooling water discharges:

- Document the flow volume from the effluent flow meters in accordance with procedures outlined in the QAPP and M-I SWACO SOP 1006.
- Perform and document visual sheen tests for each outfall in accordance with procedures outlined in the QAPP and M-I SWACO SOPs 1006 and 3005.
- Temperature will be monitored continuously and documented for non-contact cooling water (009) in accordance with procedures outlined in the QAPP and M-I SWACO LWI-001.
- Document the quantity of any chemical additive used.

The M-I SWACO NPDES Compliance Specialist is responsible for submitting to record the applicable data in the NPDES Daily Report and to provide this information to the Shell Environmental Department. The Shell Environmental Department is responsible for submitting the discharge monitoring results to EPA via the monthly submission of the Discharge Monitoring Report (netDMR). Noble is responsible for operating and maintaining all equipment related to this discharge system.

1.0 References:

1.0 NPDES GP AKG-28-8100

1.0.1 Table 10 – *Effluent Limitations and Monitoring Requirements for Non-Contact Cooling Water (D009).*

1.1 Figure 1 – Discharge points (Weston).

1.2 Noble Discoverer Best Management Practices Plan, April 2015.

1.3 Noble Discoverer Quality Assurance Project Plan, April 2015.

1.4 M-I SWACO Standard Operating Procedures: 1006, 3005, 2001, 2012, LWI-001, ENV001.01, TOX045.02, TOX002.05, TOX012.06, TOX014B.02, TOX043.06.

1.5 Shell Exploration & Production Company Alaska Venture 2015 Noble Discoverer Waste Management Plan.

2.0 General Requirements:

2.0 The M-I SWACO NPDES Compliance Specialist is responsible for all discharge sampling, testing, and reporting to Shell Environmental Department while operating under NPDES GP AKG-28-8100.

2.1 The Shell Environmental Department is responsible for maintaining the Discharge Monitoring Report (netDMR) and submitting to EPA all discharges sampling, testing and results on a monthly basis.

2.2 Sample collection will be done in accordance with the Quality Assurance Project Plan.

2.3 The Noble Engineering Department is responsible to operate and repair all equipment associated with this discharge.

3.0 Safety Guidelines:

3.0 Before any operations can take place, all personnel involved in this process must complete the following details if required by operator or contractor:

3.0.1 The Pre-Tour Meeting is when daily activities are discussed.

3.0.2 Job Safety Analysis with all involved parties present.

3.0.3 Review Risk Assessment, if applicable.

3.0.4 Noble Permit to Work.

3.1 Appropriate personal protective equipment must be worn at all times.

4.0 Discharge/Task Description:

4.0 Seawater is withdrawn from either a Port or Starboard sea chest located in the Main Engine Room, circulated through the Main Engine water jacket and then the effluent is circulated through the fresh water cooling tank before discharged to the receiving waters through an 8" line located in the Main Engine Room, Port side, below the waterline.

4.1 Primary Engine Cooling Water Pumps circulate seawater through the fresh water cooling tank process at a maximum rate of 300m³ per hour (1,320 gpm). Volume estimates of effluent discharge amounts is based on the manufacturers pump documentation

4.2 No flow meters or temperature sensors have been installed on this discharge line since the main engine does not operate once anchors are set.

4.3 The M-I SWACO NPDES Compliance Specialist is responsible for the temperature monitoring of the Main Engine non-contact cooling water. The M-I SWACO NPDES Compliance Specialist will executed this task manually on a 3-hour basis during times the Main Engine is operational and effluent is being discharged. The M-I SWACO NPDES Compliance Specialist will record on the NPDES Master Spreadsheet the high and low temperature.

4.4 M-I SWACO NPDES Compliance Specialist will conduct free oil testing using the visual sheen method on a daily basis while operating under the NPDES GP. Visual sheen tests will be performed during daylight hours while the receiving water can be seen. The M-I SWACO NPDES Compliance Specialist will record visual sheen observations on the NPDES Master Spreadsheet.

4.5 A Sample port has been installed near the discharge locations on both the port and starboard side. Samples needed for analytical testing (Initial toxicity, pH, and WET) will be collected using this port as described in section 5.0 below.

2.4 The M-I SWACO NPDES Compliance Specialist will immediately report to Shell Environmental Department at 907-830-7435, of any upset condition.

5.0 Sampling Plan for Non-contact Cooling Water (D009):

Effluent Parameter	Effluent Limitations		Monitoring Requirements	
	Average Monthly Limit	Maximum Daily Limit	Sample Frequency	Sample Type
pH	Report (s.u.)		Monthly	Grab
Free oil	No discharge		Daily	Visual
Total Volume	Report (gal)		Daily	Flow Meter
Temperature	Report (°F)		Continuous	Measure
WET	Report (TU_c)		Use rapid toxicity test 4X/well as initial screen. WET not needed if initial passes.	Collect grab sample for analysis if results show potential toxicity or 1X/well if discharge >10,000 gal during 24 hr and if chemicals are added to the system.

6.0 Clean-up:

6.0 Follow housekeeping practices.

7.0 Contingency:

7.0 Notify rig personnel if any equipment isn't working properly.

Revision Log:

Date:	Document History:	Revised/reviewed by:	Location: